

**Regional Water Quality Control Board  
Central Valley Region  
Board Meeting – 27/28/29 January 2010**

**Response to Written Comments for  
The City of Yuba City – Wastewater Treatment Facility  
Tentative Order Amending Waste Discharge Requirements  
7 January 2010**

---

At a public hearing scheduled for 27/28/29 January 2010, the Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) will consider adoption of an Order Amending the National Pollutant Discharge Elimination System (NPDES) permit for the City of Yuba City Wastewater Treatment Facility. The tentative Order was issued on 12 November 2009 for public review and comments. This document contains Central Valley Water Board staff responses to written comments received from interested persons. Written comments from interested persons were required to be received by the Central Valley Water Board by 14 December 2009 in order to be included in the public record. Comments were received by the due date from the following parties:

1. City of Yuba City (City or Discharger) and
2. California Sportfishing Protection Alliance (CSPA).

Written comments are summarized below, followed by Central Valley Water Board staff responses.

---

**CITY OF YUBA CITY COMMENTS**

---

**DISCHARGER COMMENT #1:** The discussion of anti-backsliding for several constituents in the Fact Sheet refers to Clean Water Act (CWA) section 303(d)(4) as authority for relaxing effluent limits. This citation to section 303(d)(4) is not appropriate. Section 303(d)(4) speaks only to “waters identified under paragraph [303(d)](1)(A) ...” In other words, section 303(d)(4)(A) and (B) only apply to waters that were previously identified as impaired and placed on the 303(d) list.

The receiving waters of the Feather River have never been listed as “impaired” for any of the constituents at issue (molybdenum, iron, manganese, lead and EC), therefore references to section 303(d)(4) as pertinent to these constituents is inappropriate and should be deleted.

**Response:** Central Valley Water Board staff disagrees. Section 303(d)(4) is not only applicable to discharges into impaired waters; it is a piece of the anti-backsliding legislation that amended the CWA in 1987 that contains provisions for discharges into both waters that are attaining water quality standards and waters that are not attaining standards. In Orders WQ 2008-0006 and WQO 2001-16, the State Water Resources Control Board (State Water Board) applied 303(d)(4)(B) to attainment waters that were not previously listed as impaired.

The Discharger does not include the complete cite of the CWA. CWA section 303(d)(1)(A) states, "Each State shall identify those waters within its boundaries for which the effluent limitations required by section 1311(b)(1)(A) and section 1311(b)(1)(B) of this title are not stringent enough to implement any water quality standard applicable to such waters." 1311(b)(1)(A) and (B) are Best Practicable Control Technology Currently Available (BPT) and secondary standards, respectively. EPA interprets "waters identified under paragraph (1)(A) ..." to include any waters where a permit includes water quality-based effluent limits, not just waters on a 303(d) list of impaired waters. (Draft Interim Guidance on Implementation of Section 402(o) Anti-backsliding Rules for Water Quality-Based Permits, p. 2 n.3.)

**DISCHARGER COMMENT #2:** In several instances, effluent limitations have been set well below calculated Water-Quality Based Effluent Limitations (WQBELs) and instead have been based on past performance. The Permit and the Fact Sheet simply recite the "anti-degradation policy" as its justification for setting these "performance-based" limits.

In the State Water Board Order regarding Yuba City's appeal of the 2003 permit, the State Water Board disapproved limits that were more stringent than WQBELs based on existing and past performance of the treatment facility. The State Water Board cautioned, "We note that there are situations where a more stringent, performance-based effluent limitation may be required pursuant to our anti-degradation policy, but if that is the case, *the findings must clearly explain the basis for establishing the more stringent effluent limitations.*" Order WQO 2004-0013 at page 16 (emphasis added).

Effluent limits should be set at the level reasonably necessary to protect beneficial uses, considering reasonably likely future burdens on assimilative capacity. They should not be set significantly below the levels determined to be protective of water quality and beneficial uses without sufficient justification. Simply citing to the "anti-degradation policy" without considering whether the stringent limits are necessary to maintain the receiving waters and are consistent with the maximum benefit to the people of the State is inconsistent with the law and with sound public policy.

**Response:** The WQBELs calculated for the proposed permit amendment are less stringent than the observed maximum effluent concentration (MEC) in the effluent for both lead and aluminum. For lead the WQBELs calculated from the CORMIX dynamic model produce an AMEL and MDEL of 15.1 and 18.1 µg/L, respectively. Evaluating approximately five and a half years of data, the lead MEC in the plant effluent was 3.3 µg/L from November 2003 to March 2009, indicating that the Discharger can meet a more stringent performance-based limit and that the calculated WQBELs allow the use of more assimilative capacity than is necessary. Therefore, a performance-based limit was developed using this data set to not allow reduced level of best practicable treatment or control (BPTC).

Similar to lead, a performance-based limit was established for aluminum to not allow reduced level of BPTC. The calculated aluminum AMEL and MDEL for the proposed amendment are 432 and 750 µg/L, respectively. Order R5-2007-0134 contains an existing interim performance-based MDEL for aluminum of 353 µg/L. The proposed permit contains an effluent limit equal to the existing interim limit, which is a limit that the Discharger has proven that it can comply with. A less stringent WQBEL, greater than the existing performance-based MDEL of 353 µg/L, would allow reduced BPTC and would be regulatory backsliding.

**DISCHARGER COMMENT #3:** The Tentative Order references the 353 µg/L interim limit for aluminum calculated for Order R5-2007-0134. The interim limit for aluminum was calculated assuming the effluent concentration followed a normal distribution. Generally, concentrations of constituents in wastewater and receiving waters follow a log-normal distribution. In fact, the SIP steady state procedure for calculating effluent limits (Section 1.4) is based on the concentrations following a log-normal distribution. Because an incorrect distribution will not properly account for the variability of the data, using an incorrect distribution to calculate effluent limits could greatly underestimate the reasonably expected effluent concentrations. The limit was improperly calculated by choosing a normal distribution to calculate the aluminum interim limit and should be reevaluated in the TO.

**Response:** The aluminum interim performance-based limit of 353 µg/L in Order R5-2007-0134 was calculated using a normal distribution plot; the Central Valley Water Board staff agrees with the Discharger that the aluminum data is more appropriately represented by a log-normal distribution. However, the Discharger has been able to meet the 353 µg/L performance-based limit over the past six years (November 2003 to December 2009). The MEC for this period was 310 µg/L. Maintaining the 353 µg/L effluent limit maintains BPTC and does not allow for regulatory backsliding.

**DISCHARGER COMMENT #4:** The following underlined bold text should be added to Footnotes of Tables F-2, F-24 and F-31:

Survival of aquatic organisms is 96-hour bioassays of undiluted waste **and buffered for pH** shall be no less than:

Minimum for any one bioassay -----	70%
Median for three or more consecutive bioassays -----	90%.

**Response:** Table F-2 footnote 11 includes pH buffering as part of the 96-hour bioassay: "Survival of aquatic organisms in pH buffered 96-hour bioassays of undiluted waste shall be no less than:". Table F-24 and F-31 footnotes have

been revised to indicate that pH buffering is allowed as part of the bioassay testing.

**DISCHARGER COMMENT #5:** Aluminum and lead have been removed from the Attachment F Section IV.F (Page F-90). Diazinon does not have an interim limit and should be removed as well.

**Response:** In the proposed permit amendment, the compliance schedules for aluminum and lead were removed from the permit. Therefore, discussion of the compliance schedule and interim limits for aluminum and lead was removed from the permit as part of the permit amendment. On the other hand, the interim limit for diazinon is not proposed to be removed through this amendment; it simply is no longer in effect. Although the compliance schedule for diazinon is in the past, no permit modification is necessary. Therefore, the previous compliance schedule and the previously effective interim limitations were not removed.

---

## CSPA COMMENTS

---

**CSPA COMMENT #1:** The proposed Permit utilizes a Water Effects Ratio (WER) for aluminum without establishing Water Quality Standard in accordance with Federal Regulations 40 CFR 131.5 (a)(2) and 131.11(b).

**Response:** The purpose of the Phase I WER Study for aluminum was to focus the Phase II Study by setting upper and lower estimated toxicity values. However, the Phase I Study, which was limited to 8,000 µg/L due to aluminum solubility issues, resulted in no observable effects below 8,000 µg/L. The result of the Phase I study indicates that the estimated concentration range in which aluminum toxicity may exist is greater than 8,000 µg/L.

A site-specific WER was not used for establishing the effluent limit for aluminum. Best professional judgment was used to interpret the Basin Plan's narrative toxicity objective and to determine that the USEPA's National Ambient Water Quality Criteria (NAWQC): 2002 (EPA-822-R-02-047) does not support the use of the 87 µg/L chronic criterion when receiving water pH is greater than 7.0 and hardness is greater than 10 mg/L. Data included in the Yuba City Phase I WER, combined with subsequent new information provided to the Central Valley Water Board by other major dischargers conducting Phase I WER studies with similar results as Yuba City, is the basis of the non-applicability of the chronic aluminum criteria. Phase II WER studies conducted by other dischargers does not support the use of the NAWQC chronic criterion of 87 µg/L under these specific receiving water conditions. Therefore, the USEPA's NAWQC acute criterion for the protection of freshwater aquatic life, and the Department of Public Health's

secondary Maximum Contaminant Level for aluminum was used to determine reasonable potential and calculate the final effluent limits for aluminum.

**CSPA COMMENT #2:** The proposed Permit contains effluent limitations for aluminum that are less stringent than the existing permit and based on illegal or unapproved water quality standard contrary to the Antidegradation requirements of the Clean Water Act and Federal Regulations, 40 CFR 122.44 (l)(1).

**Response:** The NAWQC chronic criterion of 87 µg/L was deemed non-applicable based on new information acquired since the adoption of Order R5-2007-0134. The proposed amendment applies the remaining applicable NAWQC acute criterion of 750 µg/L for aquatic life protection and the secondary MCL of 200 µg/L for protection of human health. The modified effluent limitations are based on new information available after the adoption of the existing effluent limitations, and comply with the applicable antidegradation requirements.

**CSPA COMMENT #3:** Effluent limitations for aluminum are improperly regulated as an annual average, contrary to Federal Regulations 40 CFR 122.45 (d)(2) and common sense.

**Response:** The proposed permit amendment contains maximum daily and monthly aluminum effluent limitations for the protection of aquatic life, and annual average aluminum effluent limitation for the protection of human health. The annual average effluent limitation for aluminum is based on the secondary MCL which address aesthetics, such as taste and odor. The MCL is not a criterion for the protection of aquatic life.

Secondary MCLs are drinking water standards contained in Title 22 of the California Code of Regulations. For secondary MCLs, Title 22 requires compliance with these standards on an annual average basis, when sampling at least quarterly. Since water that meets these requirements on an annual average basis is suitable for drinking, it is impracticable to calculate average weekly and average monthly effluent limitations because such limits would be more stringent than necessary to protect the municipal and domestic water supply (MUN) beneficial use. Central Valley Water Board staff has determined that an averaging period similar to that used by the Department of Public Health for those parameters regulated by secondary MCLs is appropriate, and that using shorter averaging periods is impracticable because it sets more stringent limits than necessary.

**CSPA COMMENT #4:** The proposed Permit contains an allowance for a mixing zone that does not comply with the requirements of Federal Regulation 40 CFR Section 131.12 (a)(1) and the *Policy for Implementation of Toxic Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP) or the Basin Plan.

**Response:** State Water Board's Water Quality Order 2008-0010 establishes that Order R5-2007-0134 properly allows mixing zones. WQ 2008-0010 specifically states "In the 2004 Order, this Board discussed in detail the provisions in the SIP relating to mixing zones and dilution. We concluded there that establishment of a mixing zone for the City's discharge was appropriate, and we remanded the permit for the Central Valley Water Board to determine the specific mixing zone. The 2007 Permit properly allows mixing zones, but fails to identify the points in the receiving water where applicable criteria or objectives must be met (the mixing zone boundary) for acute aquatic life criteria, chronic aquatic life criteria, and human health criteria." The proposed amendment establishes the points in the receiving water where applicable criteria or objectives are met, satisfying the State Water Board's remand. The comment regarding the allowance for a mixing zone is outside the scope of the proposed permit amendment and therefore not applicable.

**CSPA COMMENT #5:** The proposed Permit fails to determine reasonable potential for additive toxicity within a mixing zone as required by the Basin Plan.

**Response:** Central Valley Water Board staff does not concur. The existing Order addresses the additive toxicity of the toxic pollutants through whole effluent toxicity (WET) requirements. No changes are proposed in the permit amendment regarding WET requirements. Therefore, the above comment is outside the scope of the proposed permit amendment.

Nevertheless, WET testing requirements in the existing Order address the additive and synergistic toxicity effect of chemical-specific pollutants in the discharge. The existing Order includes an acute toxicity effluent limitation that requires a minimum 90% median survival in three or more 96-hour bioassays performed using 100% effluent. The existing Order also requires chronic WET requirements. The Discharger is required to conduct chronic WET testing, as specified in the Monitoring and Reporting Program (Attachment E, Section V). Furthermore, the existing Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity. If the discharge exceeds the toxicity numeric monitoring trigger established in this Order, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE), in accordance with an approved TRE Work Plan, and take actions to mitigate the impact of the discharge and prevent reoccurrence of toxicity. A TRE is a site-specific study conducted in a stepwise process to identify the source(s) of toxicity and the effective control measures for effluent toxicity. TREs are designed to identify the causative agents and sources of whole effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity.

**CSPA COMMENT #6:** The proposed Permit contains inadequate antidegradation analysis that does not comply with the requirements of Section 101(a) of the Clean

Water Act, Federal Regulations 40 CFR 131.12, the State Board's Antidegradation Policy (Resolution 68-16) and California Water Code (CWC) sections 13146 and 13247.

The antidegradation analysis in the proposed Permit is not simply deficient, it is literally nonexistent. The brief discussion of antidegradation requirements, in the Findings and Fact Sheet, consist only of skeletal, unsupported, undocumented conclusion statements totally lacking in factual analysis. NPDES permits must include any more stringent effluent limitation necessary to implement the Regional Board Basin Plan (Water Code 13377). The Tentative Permit fails to properly implement the Basin Plan's Antidegradation Policy. The discharge must be capable of achieving 100% compliance with Effluent and Receiving Water Limitations prior to allowing the new discharge.

**Response:** This comment is outside the scope of this hearing. Nevertheless, the antidegradation analysis performed by the Discharger as part of the Report of Waste Discharge addressed Feather River water degradation created by the discharge of lead and aluminum, as well as other constituents. This amendment alters the effluent limitations for lead and aluminum based on new information collected subsequent to the adoption of Order R5-2007-0134. However, the antidegradation analysis previously addressed the dilution credit for lead and the maximum background concentration of aluminum (1,300 µg/L) in the receiving water is greater than the revised effluent limits. For the previous reasons a new antidegradation analysis is not necessary.

Furthermore, Section II.N states, "Section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 is consistent with the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. The Discharger submitted an Antidegradation Analysis Report in accordance with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16 stating that in order to maintain beneficial uses of the receiving water and to limit degradation of the receiving water, the Discharger operates a wastewater treatment process that meets or exceeds the highest statutory and regulatory requirements which meets or exceeds Best Practical Treatment or Control (BPTC). As discussed in detail in the Fact Sheet the permitted discharge is consistent with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16."

**CSPA COMMENT #7:** Monitoring requirements are inadequate in accordance with Federal regulations, 40 CFR 122.44(i) and 122.48, which require that NPDES permits to include requirements to monitor [effluent turbidity] sufficient to assure compliance with permit limitations and requirements, the mass or other measurement specified in the

permit for each pollutant limited in the permit, and the volume of effluent discharged from each outfall.

**Response:** This comment is outside the scope of this hearing. The proposed amendment to R5-2007-0134 does not address effluent turbidity sampling. Effluent turbidity sampling is not a contention addressed in the State Water Board's Order WQ 2008-0010, nor was it part of the Discharger's request for permit modification or a reopener provision addressing aluminum, lead or diazinon.